

ABSTRACT

The invention provides an article of manufacture comprising a substantially non-immunogenic ligament or tendon xenograft for implantation into humans. The invention further provides a method for preparing a ligament xenograft by removing at least a portion of a ligament from a non-human animal to provide a xenograft; washing the xenograft in saline and alcohol; subjecting the xenograft to at least one treatment selected from the group consisting of exposure to ultraviolet radiation, immersion in alcohol, ozonation, freeze/thaw cycling, and optionally chemical crosslinking. In addition to or in lieu of the above treatments, the methods include a cellular disruption treatment and either digestion of the carbohydrate moieties of the xenograft with a glycosidase in a range of about 1 mU/ml to about 1000 U/ml or glycosidase digestion followed by treatment for sialylation. The invention also provides articles of manufacture produced by one or more of the above-identified methods of the invention. The invention further provides a ligament xenograft for implantation into a human including a portion of a ligament from a non-human animal, wherein the portion includes extracellular components and substantially only dead cells having substantially no surface α -galactosyl moieties and having sialic acid linked to at least a portion of surface carbohydrate moieties. Each of the xenografts of the invention is substantially non-immunogenic and has substantially the same mechanical properties as the respective native ligament.